#44

ISSUANCE TRANSMITTAL SHEET

ISSUANCE NUMBER:
MPD 8040.1

DATE:
August 25, 1967

MATERIAL TRANSMITTED

1. This is a new Directive.

2. The purpose of this Directive is to establish the requirements for the correlation of SA-501 and to establish the Countdown Demonstration Test (CDDT) Configuration as the controlling event for the correlation of SA-501 configuration.

FILING INSTRUCTIONS

All MSFC issuances will be filed in a standard 3-ring binder in numeric sequence without regard to the alphabetic prefix which identifies the type of issuance.

GEORGE C. MARSHALL SPACE FLIGHT CENTER

MPD 8040.1

EFFECTIVE DATE:

August 25, 1967

JOINT MSFC/KSC PROGRAM DIRECTIVE

SUBJECT: CORRELATION OF SA-501 CONFIGURATION BASELINE

SATURN V PROGRAM DIRECTIVE NUMBER: 44 REVISION NUMBER:
REVISION DATE:
PREPARED BY: SATURN V PROGRAM CONTROL OFFICE
PHONE 876-1949/SNEED

1. PURPOSE

The purpose of this Directive is to:

a. Establish the requirement for the correlation of SA-501:

(1) Design requirements and released engineering
(2) Hardware
(3) Test Specifications and Criteria
(4) Software (Flight and Ground)
(5) Test Procedures for CDDT and subsequent tests

b. Establish the Countdown Demonstration Test (CDDT) Configuration as the controlling event for the correlation of SA-501 configuration.

The foregoing requirements are designed to provide ultimate assurance that the SA-501 launch vehicle design, hardware, test specifications and criteria, software and test procedures are consistent and compatible.

2. SCOPE

This Directive is applicable to all MSFC and KSC elements, and their respective contractors, responsible for design, manufacture and test of the SA-501 launch vehicle, ground support equipment and software.

3. REFERENCE

Apollo Program Directive Number 26, dated April 18, 1967, Subject: Preparation of Test and Checkout Plans and Procedures at KSC.

4. POLICY

a. It is the responsibility of affected major MSFC and KSC design contractors to implement the requirements of this Directive by working directly with operating contractors and other interfacing contractors, e.g.

(1) Boeing Michoud with Boeing KSC
(2) Boeing Michoud and Boeing KSC with IBM KSC and IBM Huntsville
(3) Boeing Michoud and Boeing KSC with GE Huntsville

b. The lead contractors will be responsible for taking the initiative in establishing such activities as required for the correlation of SA-501 and will establish degree of participation necessary by other affected contractors.

c. The information and experience gained during the SA-501 Pre-operation Safety Evaluation will be used when applicable.

d. Experience and knowledge gained in this correlation of SA-501 will be passed on to SA-502 and subsequent launch vehicles.

5. RESPONSIBILITIES

a. The following lead contractors are responsible for establishing teams, including other affected contractors, to accomplish the correlation specified in this Directive:

TEAM	LEAD CONTRACTOR
(1) S-IC Stage	Boeing, Michoud
(2) S-II Stage	SD/NAA, Seal Beach
(3) S-IVB Stage	MDC, Huntington Beach
(4) I. U.	IBM, Huntsville
(5) Launch Vehicle System and associated equipment, including Spacecraft and Launch Complex Integration	Boeing, SE&I, Huntsville
(6) Flight Software	IBM, Huntsville

5 (Continued)

b. The lead contractors identified in Paragraph 5.a., above, will accomplish the following correlation for SA-501:

(1) Identify the required configuration baseline using:

(a) The Configuration Index and status report, or equivalent which includes contractual configuration requirements plus a listing of approved ECP's and status thereof.

(b) The as-shipped configuration (Reference DD-250 or Form 71) plus all modification kits installed at KSC.

(2) Define the released engineering plus additional releases contemplated prior to CDDT.

(3) Using the released engineering as the reference, compare required configuration baseline to the released engineering as it will be at SA-501 CDDT.

(a) Identify and document differences between required configuration baseline and released engineering.

(b) Reconcile differences in accordance with prescribed contractual configuration management requirements (e.g., submission of ECP) and/or update released engineering as necessary.

(4) Define the "as-is" configuration as represented by test engineers' redline drawings or other pertinent documentation.

(5) Compare the released engineering as it will be at SA-501 CDDT to the "as-is" configuration as represented by the test engineers' redline drawings or other pertinent documentation.

NOTE: This comparison will begin at the system level immediately upon completion of an established design baseline for CDDT by the design agency. Comparisons will be updated as the established baseline changes due to mandatory modifications.

(a) Identify and document differences between the "as-is" configuration and the test engineers' redline drawings or pertinent documentation.

5. b. (5) (Continued)

(b) Reconcile the differences in accordance with prescribed configuration management procedures.

1. The following procedures will apply for MSFC furnished equipment:

a. Changes required to hardware to reconcile differences between the released engineering and the "as-is" configuration will be initiated by FEC or emergency ECP except where modification kits have been approved but not installed.

NOTE: Approved modification kits shall be installed at the earliest possible point. Additional documentation will not be resubmitted, except for the submission of Installation Notice Cards (INC's).

b. Changes required to engineering released drawings to reconcile differences will be initiated by FEC's or emergency ECP's.

c. Waivers will be handled by FEC's.

NOTE: Previously approved waivers will not be resubmitted.

2. KSC will provide procedures for KSC furnished equipment.

3. Reconciled configuration established in Paragraph 5. b. (5), above, will be used to validate and update test specifications and criteria, software and procedures.

(6) Identify approved updated Test Specifications and Criteria.

5.b. (Continued)

(7) Compare the reconciled configuration (Resulting from Paragraph 5.b.(5), above) and the finally approved test specifications and criteria with:

- Software (Ground Tapes)
- Procedures (including ATOLL)

(a) Identify and document the differences.

(b) Reconcile identified differences in accordance with prescribed procedures.

(8) IBM will assume the lead role, with support from stage contractors, Boeing SE&I and others, to assure the compatibility of the flight software and flight hardware as it will be at time of CDDT.

(a) Identify and document differences.

(b) Reconcile differences in accordance with prescribed procedures.

c. The following points (persons) of commitment are established to provide further implementing instructions as required, clarify intent and requirements of this Directive, and oversee contractors' implementation of this Directive:

MSFC MEMBER and OFFICE SYMBOL	FUNCTION	KSC MEMBER and OFFICE SYMBOL
James T. Murphy I-V-MGR-M	Chairman	Walter D. Moody AP-SAT
Bill H. Sneed I-V-P	Alternate Chairman	----
Donald R. Bowden I-V-PC	Configuration Management	----
Ronald B. Paulus I-V-PC	Alternate - Configuration Management	----

5. c. (Continued)

MSFC MEMBER and OFFICE SYMBOL	FUNCTION	KSC MEMBER and OFFICE SYMBOL
Jewel W. Moody I-V-Q	Safety	----
Wm. L. Shrader I-V-Q	Alternate - Safety	----
Lynnon F. Grant I-V-IU	Software	----
Hermon H. Hight I-V-IU	Alternate - Software	----
Howard D. Burns I-V-T	Test and Checkout Specification and Criteria	----
Robert E. Dunbar I-V-T	Alternate - Test and Checkout Specification and Criteria	----
----	Integrated Test Procedure	Walter D. Moody AP-SAT

d. Project Managers and affected contractors will designate counterpart persons (points) of commitment to interface with the functional areas identified in the preceding paragraph.

e. The appropriate Saturn V Project Managers (S-IC, S-II, etc.) will:

(1) Immediately provide copies of this Directive to affected contractors as written confirmation of the verbal directive given in the Saturn V Review Meeting on August 17, 1967 (Thursday).

(2) Personally discuss and agree upon the importance and urgency of the implementation of this Directive on a first priority basis.

6. CERTIFICATION

The final product of the correlation required by this Directive will be a certification by the lead and other affected contractors that engineering data and other documentation, test specifications and criteria, test and checkout procedures and software are compatible with the SA-501 CDDT design baseline (the "as-is" CDDT hardware configuration).

7. IMPLEMENTATION

a. Every effort will be made to minimize the interference between actions required by this Joint Program Directive and the preparation for SA-501 launch. However, it is imperative that actions prescribed herein be given necessary emphasis and priority to assure completion prior to start of SA-501 CDDT.

b. Distribution of this Directive will be made immediately, by most expeditious means, to all affected agencies.

Arthur Rudolph
Manager, Saturn V Program, MSFC

K. C. Middleton
Apollo Program Manager, KSC

Distribution:
(See Page 8)

Distribution (for action)

MSFC:

I-V-MGR-M, Mr. Murphy
I-V-S-IC, Mr. Urlaub (3)
I-V-S-II, Col. Yarchin/
Mr. Godfrey (3)
I-V-S-IVB, Mr. McCulloch (3)
I-V-IU, Mr. Duerr (3)
I-V-IU, Mr. Grant/Mr. Hight
I-V-G, Mr. Smith
I-V-E, Mr. Bell/
Mr. Strickland (2)
I-V-T, Mr. Burns/Mr. Dunbar
I-V-P, Mr. Sneed
I-V-PC, Mr. Bowden/Mr. Paulus
I-V-Q, Mr. Moody/Mr. Shrader

KSC:

AP-SAT, Mr. Moody (50)

Distribution (for information)

MSFC:

DEP-T, Dr. Rees
DEP-T, Mr. Neubert
R-DIR, Mr. Weidner
R-DIR, Mr. Cook
R-P&VE-DIR, Dr. Lucas
R-ASTR-DIR, Dr. Haeussermann
R-AERO-DIR, Dr. Geissler
R-TEST-DIR, Mr. Heimburg
R-QUAL-DIR, Mr. Grau
R-OM-DIR, Col. Fellows
R-TO-DIR, Mr. Richard
I-DIR, Gen. O'Connor
I-DIR, Dr. Mrazek
I-CO-CH, Col. Hirsch
I-RM-F, Dr. Farish
I-E-MGR, Mr. Brown
I-I/IB-MGR, Col. Teir
I-V-MGR, Dr. Rudolph
I-V-MGR-O, Mr. Bramlet
I-V-T, Mr. Frye
I-K-V, Col. Murphy (2)

MSC:

PD, Mr. Maynard

NASA Headquarters:

MA, Gen. Phillips (3)

KSC:

AP, Admiral Middleton